#### (12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

# (19) World Intellectual Property Organization

International Bureau



### . 1 (1881) 1

## (43) International Publication Date 7 October 2004 (07.10.2004)

**PCT** 

## (10) International Publication Number WO 2004/085937 A1

(51) International Patent Classification7:

F25D 11/02

(21) International Application Number:

PCT/KR2004/000692

(22) International Filing Date: 26 March 2004 (26.03.2004)

(25) Filing Language:

Korean

(26) Publication Language:

English

(30) Priority Data:

 10-2003-0019732
 28 March 2003 (28.03.2003)
 KR

 10-2003-0019726
 28 March 2003 (28.03.2003)
 KR

 10-2003-0019727
 28 March 2003 (28.03.2003)
 KR

 10-2003-0019733
 28 March 2003 (28.03.2003)
 KR

(71) Applicant (for all designated States except US): LG ELECTRONICS INC. [KR/KR]; 20, Yoido-Dong, Youngdungpo-Gu, Seoul City 150-721 (KR).

(72) Inventors; and

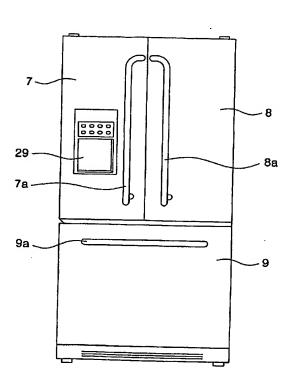
(75) Inventors/Applicants (for US only): KIM, Ill-Shin [KR/KR]; 1-709, Lotte Apartment, Namyang-dong, Changwon City, Gyeongsangnam-do 641-091 (KR).

YU, Seon-II [KR/KR]; 905-606, Jugong Apartment, 13, Haan-dong, Gwangmyeong City, Gyeonggi-do 423-746 (KR). SEOK, Kun-Jun [KR/KR]; 102, Juseong Art Villa, 1548-12, Seocho 3-dong, Seocho-ku, Seoul City 137-073 (KR). KWON, Yong-Chol [KR/KR]; 102-802, Cheongsol Apartment, Anmin-dong, Changwon City, Gyeongsangnam-do 641-903 (KR).

- (74) Agent: WOORIN PATENT FIRM; 2nd Floor, Shinwon Bldg., 823-14 Yeoksam-dong, Kangnam-gu, Seoul City 135-080 (KR).
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW),

[Continued on next page]

(54) Title: REFRIGERATOR



(57) Abstract: In the related art refrigerator, its structure for supplying water to a dispenser and water tank was complicated. In addition, since an icemaker is installed in a refrigerating chamber of the refrigerator, there is a problem in that the water supplied into the icemaker is frozen. Furthermore, if the icemaker is installed in the freezing chamber of the refrigerator in which the refrigerating chamber is formed at a lower portion thereof and a refrigerating chamber is formed at an upper portion thereof, there is another problem in that it is difficult to control the temperature in the refrigerating chamber or ice-making capability of the icemaker is lowered. The present invention is directed to a refrigerator. According to an aspect of the present invention for solving the above problems, there is provided a refrigerator including a refrigerating chamber formed at a relatively upper portion of a refrigerator body and a freezing chamber formed at a relatively lower portion of the refrigerator body, which comprises an ice-making chamber which is partitioned in the refrigerating chamber by means of insulating walls and includes an icemaker for making ice and an ice storage for storing the ice made in the icemaker, a first heat exchanger for generating cold air to regulate the temperature in the ice-making chamber, and a second heat exchanger for generating cold air to regulate the temperature in the freezing and refrigerating chambers, wherein the first and second heat exchanger are components of a heat exchange cycle. According to the refrigerator of the present invention so configured, there are advantages in that the temperature in the refrigerating chamber can be accurately controlled, the loss of cold air can be minimized and the structures for supplying water into the icemaker and the dispenser can be simplified.



#### WO 2004/085937 A1



Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

#### Published:

- with international search report